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OIT 4-3

OIT-0446-86
21 JUL 1986

MEMORANDUM FOR: Director of Global Issues

FROM: Edward J. Maloney
Director of Information Technology

SUBJECT: OIT Survey on Narcotics Effort

REFERENCE: A. OGI Memo, dtd 6 Nov 85, Same Subject
B. OIT Memo, dtd 13 Feb 86, Same Subject

1. Please find attached a copy of the results of IISG's survey of the OGI Strategic Narcotics Division's (SND) need for additional ADP support; it is entitled OGI Strategic Narcotics Division Data Processing Environment: Initial Survey and Analysis. Our conclusion is that OGI can benefit most from additional utilization of the capability available in SAFE Delivery 2. We believe that as OGI/SND people receive SAFE Delivery 2 training many of their existing problems will be answered. However, specialized training could also be provided to teach the intricacies of those SAFE Delivery 2 features of most relevance to the SND user.

2. Due to the increasing demand for narcotics-related intelligence products, SND's manual methods of indexing and referencing raw intelligence have become overloaded. We recommend that OGI initiate a Systems Requirements Specification (SRS) task through IISG. The SRS will establish the feasibility and cost of taking the initial step to build an automated structured database to handle the textual data. This step will also open up the exploitation of linking the relevant textual data with the spatial data of MAGAS. We believe that, regardless of which ADP systems are used or developed, the interfaces between the textual data and the spatial data should be closely studied.

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SUBJECT: OIT Survey on Narcotics Effort

3. Upon your decision to implement either or both of these options IISG can initiate the work and discuss the funding required immediately. IISG is looking forward to providing assistance to the SND analysts so that they may perform their work more productively.

4. Please feel free to contact me should these topics require further clarification or if there is any further service that OIT can perform for you.

STAT

Edward J. Maloney

Attachment:
As stated

cc: D/OIR (w/atts)

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SUBJECT: OIT Survey on Narcotics Effort

C/SAS/OIT/ [redacted] (17 July 1986) STAT

Distribution:
Orig - Addressee (w/atts)
1 - D/OIT (w/atts)
2 - OIT Registry
1 - [redacted] STAT
1 - SAFE Chrono

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18 FEB 1

OIT 0122-86
13 February 1986

MEMORANDUM FOR: Director of Global Issues

FROM: William F. Donnelly [redacted] 25X1
Director of Information Technology

SUBJECT: OIT Survey on Narcotics Effort

REFERENCE: OGI Memo, dtd 6 Nov 85, Same Subject

Dave,

As you may know, in January and February OIT's Intelligence Information Systems Group has held discussions with [redacted] and others about their problems that may require our assistance. We will use our own resources in this conceptualization phase, but expect that the services of a contractor will be helpful if and when we begin to write more technical specifications. We will request your funding support, as necessary, for that phase. If development activity is necessary, we will look for the best way to deliver something quickly. 25X1

[redacted] 25X1
William F. Donnelly

OIT/FO: [redacted] (13Feb86) 25X1

Distribution:

Original - Addressee
2 - D/OIT
2 - Registry
1 - IISG/OIT

[redacted] 25X1

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OIT-0899-85

6 NOV 1985

MEMORANDUM FOR: Director of Information Technology

FROM: [redacted] 25X1
Director of Global Issues

SUBJECT: OIT Survey on Narcotics Effort [redacted] 25X1

1. I would like to take up your offer to have an OIT survey team look at our narcotics effort. [redacted] 25X1

2. The Office of Global Issues (OGI) now has two branches with about 20 analysts producing analysis on all aspects of the problem--drug crop estimates, the effect of drugs on political and economic institutions, trafficking organizations, and money laundering. Because the narcotics account grew so rapidly, little time was devoted to planning ADP needs, and the two narcotics branches currently have made only limited use of ADP. The sole exception is the frequent and heavy use of a geographic information system--MAGAS--to store spatial data such as imagery coverage and requirements and narcotics crop growing areas. Much information has been collected over the past two years that is non-spatial in nature, however, and the narcotics branches have been unable to computerize any of this data, largely because of the lack of time and personnel knowledgeable in ADP. [redacted] 25X1

3. As the narcotics account matures, the branches are increasingly being called on to chart and analyze trends that extend over several years and to provide analysis of an activity that spills across national borders almost at will. These analyses are becoming more difficult because of the lack of computerized data bases. At this time, based on our preliminary analyses, we see the need to build data bases on the following topics:

- o Trafficking organizations and individuals in specific countries.
- o Drug crop production in selected countries to include such information as hectarage, eradication, fields, etc.
- o Drug seizures worldwide to help us assess the reliability of seizure information released by foreign governments and chart movements between producing countries and markets.

[redacted] 25X1

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SUBJECT: OIT Survey on Narcotics Effort [redacted] 25X1

Another related need is for advice and guidance on how to ensure that these databases can interact with MAGAS when that system is linked to VM. [redacted] 25X1

5. We would appreciate any advice or guidance OIT could provide, perhaps a survey of the data coming in to decide what sort of databases should be built and follow up assistance on planning, building, and maintaining them. If your folks can help us, their contact point in OGI will be [redacted] Chief of the Strategic Narcotics/Eurasia-Africa Branch. He is located in Room 1215 Ames Building, and can be reached on secure line [redacted] 25X1
25X1
25X1

[redacted] 25X1

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Office of Global Issues Strategic
Narcotics Division
Data Processing Environment:
Initial Survey and Analysis

27 May 1986

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1.0 INTRODUCTION

1.1 PURPOSE

In response to the memorandum from the Director, OGI dated 6 November 1985, OIT has completed its initial analysis of the OGI Strategic Narcotics Division (SND) operational and ADP environment. This paper responds to the request of the D/OGI for OIT to examine ways to enhance and increase the amount of automated data processing support to the personnel of OGI. Its purpose is to provide the D/OGI with the results of OIT's initial survey of OGI needs and to serve as a starting point for the detailed specification of OGI ADP requirements. The paper then presents a range of potential actions to be taken to improve the level of ADP support.

1.2 SCOPE

This paper encompasses, on the level of an overview, (1) the functional needs of OGI Strategic Narcotics Division personnel for additional structuring, linkage and automation of data, and (2) OIT's initial list of potential solutions to these needs. The paper represents our best understanding of the OGI SND situation based upon the preliminary interviews that we have been able to hold since the initial request was made.

1.3 OBJECTIVES

Any implemented solutions to the needs of the OGI SND analysts must proceed in an orderly, logical and structured manner. This document is intended to provide an initial baseline for the beginning of the detailed solutions, whether they involve building new systems or simply optimizing the utilization of existing capabilities.

2.0 FINDINGS

2.1 STRATEGIC NARCOTICS DIVISION FUNCTIONS

The day to day activities of SND personnel that were examined for potential automated support are organized into the functions of the production analysts and the functions of the imagery analysts. While the production and imagery analysts clearly have separate roles and tasks, in practice the production analysts and the imagery analysts work fairly closely together and need to coordinate their activities on a number of topics. Any optimal automated system should support this. Therefore, the following functional breakout should not be taken to mean

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that any proposed solution will support each group independently without allowing these necessary, and sometimes critical, interactions to occur. The analytic functionality of SND is broken into two parts - Imagery Analysis and Production Analysis.

2.1.1 Imagery Analysis

The SND imagery analysts spend their time planning for and executing imagery collection and readout. Most collection activities are closely coordinated with the SND production analysts so that imagery can be obtained that will be of maximum benefit in the SND analytic process. The information that is of use to the imagery analyst includes:

- crop densities and condition
- growing conditions
- other crops grown in a given region
- cultivation methods

Working from this data the analyst can then perform several important functions, which include:

- delineation of potential growing areas
- identification of drug crops
- mensuration of drug crops
- ground truthing

The imagery analysts once a year go on ground truthing missions to their assigned region of interest to get a first hand look at what the drug crop production is like. They are often accompanied on these missions by the production analyst responsible for the same area. Crops vary greatly in appearance from year to year and the Imagery Analyst must be aware of these changes in order to properly interpret the collected imagery.

2.1.2 Production Analysis

The responsibilities of the production analysts are broken up into geopolitical regions. Each region has its own peculiarities that any automation to the analytic process must support. A system cannot be implemented that is so rigid that it will not accommodate these regional peculiarities. Currently, the production analyst spends much of their time on research. Information involved in the production analysis process includes:

- seizure data
- pricing and purity data
- interpretation of crop estimates
- identification of individuals involved in trafficking
- biographical information of individuals and organizations
- relationship identification between governments and drug organizations
- trafficking patterns
- plant characteristics

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The production analyst is responsible for the integration of all of this information into an accurate portrayal of the narcotics business in the reports and articles that they write.

2.2 CURRENT ADP SUPPORT ENVIRONMENT

The existing OGI computing environment is comprised of access to the following systems:

- MAGAS and MAGAS II
- SAFE Delivery 1
- VM/AIM
- IBM PC/AT

2.2.1 MAGAS

MAGAS is the current production system for spatial data and is used to graphically represent geopolitical boundaries, potential production areas, known cultivated areas, transportation routes, hydrologic features, areas of imagery coverage, detailed information concerning that coverage, etc. MAGAS is in the process of being replaced by MAGAS II, an enhanced MAGAS system. SND production has not yet been moved to the MAGAS II system. All geographic regions currently stored in MAGAS and MAGAS II were input via manual digitizing techniques. The MAGAS systems are each powered by a VAX 11/785 minicomputer. No direct linkage currently exists between the MAGAS systems and a VM system.

2.2.2 VM/AIM

The SND office in the Ames building currently has access to two VM terminals. The electronic mail capabilities of AIM are utilized by SND personnel, but not extensively due to the problem of limited terminal access.

2.2.3 SAFE

Through the VM terminals, SND analysts have access to the SAFE Delivery 1 system. The bulk of the textual information that feeds the activities of the production analysts is captured via SAFE profiling of incoming cable traffic. In screening the captured SAFE cables, the various production analysts utilize different methods of reviewing, screening and storing information for future reference. Once the cable has been matched to profile criteria and deposited in a SAFE Mail File, however, all of the subsequent bookkeeping processes are manual and currently involve a great deal of hardcopy filing. Furthermore, each analyst has a

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personal filing system designed to suit their geographic region of analysis and their personal preferences for filing. Therefore, these filing systems are unique to each analyst.

By virtue of the manual research that must be done when searching for information in these files, many potentially useful pieces of information are never found due to limitations of these individual, manual indexing systems.

Due to the limited number of SAFE terminals, SND analysts cannot base much of their daily activites on the usage of automated tools. Terminal availability severely limits the usage of potentially useful SAFE and AIM features. SND is scheduled to receive 10 additional SAFE terminals at a future date. This occurrence creates a good opportunity for a dramatic increase in the utilization of SAFE and AIM capabilities.

2.3 INTERFACES

In the performance of their mission, SND communicates with the following organizations:

- DEA - DEA sends SND their so-called "greenies" which are summary sheets with information regarding drug seizures and arrests.
- NPIC - is not utilized directly, OGI sometimes uses certain of NPIC's processing systems.
- OIA - at one time OGI imagery analysts were moved to OIA, but there is currently no formal relationship between OIA and SND Imagery Analysts. However, the OIA narcotics people and SND IAs do work cooperatively on certain of their publications and OGI occasionally utilizes OIA equipment. The OIA narcotics branch mission differs from SND in that OIA has the mission of identification of airstrips, boat docks, roads, paths, and other transportation features used in drug trafficking.
- ASG - two individuals in ASG work closely with SND in the preparation of statistical estimates of crop yields; ASG works with hardcopy MAGAS maps and helps SND plan for imagery tasking which will support their statistical crop estimation data needs. ASG would benefit greatly from a more complete historical crop database.
- CPAS GRAPHICS - SND conceptualized graphics which are destined for publication or inclusion in high level briefings are prepared by CPAS graphics personnel.

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3.0 ANALYSIS OF FUTURE NEEDS

Upon initial analysis, our findings suggest an array of potential solutions, ranging from more effective utilization of current resources to specification and development of large new systems. The following address the solutions which appear most feasible and practical.

• More Effective Utilization of the Expanded SAFE Capabilities - in considering ways to make the SND analysts more effective, the capabilities of SAFE Delivery 2 must be considered. These capabilities include:

- √ More powerful profile creation and profile and file maintenance features
- √ Cut and paste from cable traffic in SAFE Mail Files to other text files
- √ Data file storage, indexing, and word processing capabilities

• Optimal usage of MAGAS resources - maximize the potential usage of the MAGAS I and II systems that are currently available to SND.

• Structured database to handle textual data - implementation of a relational database would allow formatted storage and retrieval of textual data elements. Certain frequently used queries could be "canned" for convenient usage, while still retaining the flexibility of custom built queries to allow analysts to research trends and patterns more thoroughly than previously possible with manual research methods.

• Linkage between textual and spatial databases - With the existence of a structured textual database comes the ability to link the textual and spatial data elements utilized in SND. For example, an analyst working a new geopolitical area on the MAGAS system might be able to highlight the area with their cursor and get a textual description of the drug crops grown in the area, the climate, the political structure and control of the region, transportation in the region and a historical summary of narcotics related activities in that area.

• Software based analysis tools - Once the data that is of basic use to the analyst is stored on a computer system, advantage can be taken of software analytic tools. The historical database could be searched in a number of ways, including tracking of individual drug traffickers aliases, group affiliations, and narcotics price trend analyses.

4.0 CONCLUSIONS

4.1 SAFE USER TRAINING

SAFE user training would provide a simple means of increasing utilization of existing ADP resources. As more terminals become available to allow SND SAFE access and access to SAFE Delivery 2, specialized training could be provided to teach the intricacies of those SAFE

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Delivery 2 features of most relevance to the SND user. Specialized training should, however, be considered only after all SND staff have attended the existing SAFE Delivery 2 training series. The primary SAFE Delivery 2 features available to the SND analysts tasks are:

4.1.1 Disseminating Information.

Through the creation and maintenance of SAFE profiles, incoming cable traffic can be effectively screened so that the analyst receives only those cables of direct relevance to their area of interest. SAFE Delivery 2 will enhance these profiling capabilities with the addition of global profiles which could be applied at the division or branch level to select cables of general interest to the entire office. Profiles creation should, whenever possible, logically match the structuring of spatial data in the MAGAS database.

4.1.2 Reading and Disposing of Information

Currently, most SND analysts utilize SAFE to print their cable traffic so that they can read this traffic in hardcopy. SAFE Delivery 2 capabilities exist for the annotation and indexing of cable traffic on-line in electronic formats. Indexing of cable-based information should be designed as much as possible to facilitate matching to the layered MAGAS spatial data.

4.1.3 Searching and Retrieving Information

As cable traffic is stored, the user creates indexes against which this information can be searched and retrieved. Search and retrieval using automated capabilities is much more accurate and thorough than current manual methods.

4.1.4 Maintaining Information

Files and databases can be created and maintained on the personal file level or the level of large system files and databases. As the amount of information which is maintained by this means is increased the users ability to perform meaningful retrieval of historical information becomes much more powerful.

4.1.5 Composing and Writing Reports

Information can be accessed and processed with typical word processing tools. Therefore, the analyst will be able to complete almost all of the tasks involved in report preparation using electronic data formats.

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4.1.6 Coordinating, Reviewing and Editing

Coordination and revision of draft reports can be done with on-line SAFE word-processing capabilities. Time consuming manual annotation of multiple hardcopy drafts can be minimized or eliminated.

4.2 SYSTEM AUGMENTATION AND DEVELOPMENT

The option to augment and link existing ADP capabilities involves considerably more effort and commitment than optimization of existing capabilities. Software development of any SND system should not begin without careful analysis and documentation of the needs and functions performed by the SND analysts who will comprise the user population of any system developed.

At this initial stage of investigation, several potential approaches have been identified to increase the connectivity and availability of automated support to SND analysts. The following list addresses processing resources which are potentially available for the development of new systems capabilities or for augmentation with additional capabilities and for linkage to VM:

- VAX 11/785 Based - OGI already owns, as part of their MAGAS system, a VAX 11/785 minicomputer. Depending upon the load placed upon this processor by the MAGAS workstation and other MAGAS functions, the VAX could form the basis for an expanded OGI architecture. A factor that needs to be considered in this option is the degree to which INTERGRAPH has done proprietary customization to the VAX VMS software. The pure VAX VMS design alone places no limitations on the handling of both spatial and non-spatial data. Since the spatial data is currently resident on the VAX system, the only new interface which would require development would involve linkage to the SAFE originated text files.

- VM Based - The non-spatial data of an OGI SND system could be implemented on the agency's VM system under the management of a DBMS. Linkage between VM based logical data records and spatial data on MAGAS would still need to be resolved since a link between VM and the VAX does not currently exist. Resource availablility on the VM system is somewhat limited and problems of contention are likely.

- IBM PC/AT Based - Any system based upon a PC/AT architecture would be somewhat more decentralized and limited in computing power than the previous two options. Design issues involved in this option include the development of interfaces to MAGAS for spatial data extraction and to SAFE for textual data extraction. With interfaces to both a MAGAS system and to VM/SAFE, a PC/AT based system is a very viable option, especially if OGI should decide to build a prototype of an integrated data workstation. Expansion capabilities exist for upgrading graphics display and processing functions on the PC/AT.

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Should the decision be made to proceed with the development of a SND system, the following conclusions should be considered:

- OGI SND will benefit greatly from the automation and structuring of the textual information handling in fulfillment of their mission. Even the most elementary structured database would improve the analysts ability at data management and research.

- A phased approach to system development could provide initial automation quickly with enhanced system features being built as time and money allow. No extensive systems development and changes to MAGAS should be made until after SND's move to the new building.

- Any design and development of enhanced systems should commence with a formal systems requirements definition process resulting in a System Requirements Document (SRD). Any development must be properly scoped and planned prior to initiating this activity.

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